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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,035	07/23/2001	Paul C. Davis	23	3476

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07/03/2002

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EXAMINER

VU, QUANG D

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 07/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/911,035

Applicant(s)

DAVIS, PAUL C.

Examiner

Quang D Vu

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 and 26-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 26-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 18-25, drawn to method of fabricating a mixed signal integrated circuit device, classified in class 438, subclass 207.
- II. Claims 1-17 and 26-29, drawn to an integrated circuit, classified in class 257, subclass 506.

During a telephone conversation with Wayne Ellenbogen on 06/05/2002 a provisional election was made without traverse to prosecute the invention of group II, claims 1-17 and 26-29.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-17 and 26-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 26 recite the limitation "...electrical isolation between the first and second circuit sections is increased". The scope of the claim is vague because it cannot be determined

how the phrase further defines the claimed subject matter. It is not known how the circuit sections, which are already isolated, can be more isolated.

Claim 2 recites the limitation "...conductive plugs...". While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). The term "conductive plugs" in claim 2 is used by the claim to mean " low-resistance diffusion region " while the accepted meaning is "a conductive plug, such as metal or polysilicon."

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 6-9, 13-16, 26-29 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 4,912,054 to Tomassetti.

Regarding claims 1 and 26, Tomassetti teaches an integrated circuit, comprising:  
a first circuit section (18, 20) formed in a substrate;  
a second circuit section (16) formed in the substrate, the second circuit section being spaced laterally from the first circuit section;  
an isolation buried layer (13) formed under at least a portion of the first circuit section;  
and

a conductive layer (78) formed on a surface of the integrated circuit and operatively coupled to the isolation buried layer (see figures 1 and 3).

Tomassetti does not explicitly teach the conductive layer reducing an effective lateral resistance of the isolation buried layer, whereby an electrical isolation between the first and second circuit sections is increased. The device taught by Tomassetti would have inherently performed the same function since Tomassetti teaches each and every structural limitation of the claimed invention.

Regarding claim 6, Tomassetti teaches the isolation buried layer is connected to a reference source (see figures 1 and 3).

Regarding claim 7, Tomassetti teaches the conductive layer is formed at least in part of metal.

Regarding claims 8 and 28, Tomassetti teaches a second isolation buried layer (12) formed under at least a portion of the second circuit section; and a second conductive layer (64) formed on a surface of the integrated circuit and operatively coupled to the second isolation buried layer (see figures 1 and 3).

Tomassetti does not explicitly teach the second conductive layer reducing an effective lateral resistance of the second isolation buried layer. The device taught by Tomassetti would have inherently performed the same function since Tomassetti teaches each and every structural limitation of the claimed invention.

Regarding claim 13, Tomassetti teaches the first and second conductive layers are electrically connected to separate reference sources (see figures 1 and 3; column 4, lines 49 – column 5, line 61).

Regarding claim 14, Tomassetti teaches the second circuit section comprises at least one bipolar transistor device, the bipolar transistor device including a collector buried layer formed in the substrate above the second isolation buried layer (see figures 1 and 3).

Regarding claim 15, Tomassetti teaches the integrated circuit is a mixed signal integrated circuit; the first circuit section (18, 20) comprises a digital circuit section; and the second circuit section (16) comprises an analog circuit section (see figures 1 and 3).

Regarding claim 16, Tomassetti teaches the isolation buried layer has a lower resistivity than the substrate.

Regarding claims 2 and 27, Tomassetti teaches a plurality of diffused regions formed in the substrate, the diffused regions providing a substantially low resistance path for electrically connecting the conductive layer to the isolation buried layer.

Regarding claims 9 and 29, Tomassetti teaches a plurality of diffused regions formed in the substrate, the diffused regions providing a substantially low resistance path for electrically connecting the conductive layer to the second isolation buried layer.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,912,054 to Tomassetti.

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Regarding claim 17, Tomassetti does not teach the isolation buried layer is formed in the substrate at depth in a range from about 2 micrometers to about 5 micrometers from an upper surface of the substrate. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to find the optimal depth of the buried layer through routine experimentation, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

### *Conclusion*


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang D Vu whose telephone number is 703-305-3826. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

QVU  
June 28, 2002

QVU

  
TOM THOMAS  
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